PG-627

IV Semester M.B.A. (Day) (CBCS) Degree Examination, July - 2019
(2014-15 & Onwards)

11028

MANAGEMENT

Paper - 4.2.3 : Risk Management and Derivatives

Time : 3 Hours

Max. Marks : 70

SECTION - A

Answer **any five** of the following questions. Each question carries **five** marks.

5x5=25

1. Compare and contrast Forwards and Futures.

2. "Mitigating any risk is not an easy task, and capital budgeting risk is no exception". List and explain the various tools for mitigating capital budgeting risk.

3. What is 'Risk' ? Explain the various types of risk a business enterprise is exposed to, with examples.

4. Shivam Ltd. is considering two mutually exclusive projects A and B. Project A costs ₹ 36,000 and project B is ₹ 30,000. You have been given below the net present value probability distribution for each project :

Project A		Project B	
NPV estimates ₹	Probability	NPV estimates ₹	Probability
15,000	0.20	15,000	0.1
12,000	0.30	12,000	0.4
6,000	0.30	6,000	0.4
3,000	0.20	3,000	0.1

(i) Compute the expected net present values of projects A and B.

(ii) Compute the risk attached to each project i.e., standard deviation of each probability distribution.

(iii) Which project do you recommend ? State with reasons.

P.T.O.

5. A sold in April, Nifty Futures contract for ₹ 20,20,000. On January 15th. For this he had paid an initial margin of ₹ 2,02,000 to his broker. Each Nifty Futures contract is for the delivery of 200 Nifties. On July 25th, the Index was closed on 10,850. How much profit/loss A has made ?

6. The September Option of RK Ltd., stock at a strike price of ₹ 130 is available at a call option premium of ₹ 10. The contract size is 100 shares. The price of the stock today is ₹ 140. A range of prices beginning from 110 and ending with 160 with intervals of 10 is possible as at the expiry date.

   (a) What is the pay-off for the call holder on expiration ?

   (b) What is the call writer's pay-off on expiration ?

7. Mr. John established the following spread on the TTK Ltd.'s stock :

   (i) Purchased one 3-month put option with a premium of ₹ 15 and an exercise price of ₹ 900.

   (ii) Purchased one 3-month call option with a premium of ₹ 90 and an exercise price of ₹ 1100.

   TTK Ltd.'s stock is currently selling at ₹ 1000. Calculate gain or loss, if the price of stock of TTK Ltd. :

   (i) Remains at ₹ 1000 after 3 months.

   (ii) Falls to ₹ 700 after 3 months.

   (iii) Raises to ₹ 1200 after 3 months.

   Assume the size of option is 200 Shares of TTK Ltd.

SECTION - B

Answer **any three** questions. Each question carries **ten** marks.   **3x10=30**

8. Outline briefly the various commodity exchanges of India and list out the major commodities traded in those exchanges.

9. Mr. Patel has to decide whether or not to drill a well on his farm. In his village 40% of the wells drilled were successful at 250 feet of depth. Some of the farmers who did not get water at 250 feet drilled further up to 300 feet, but only 10% struck water at 300 feet. Cost of drilling was ₹ 60 per foot. Mr. Patel estimated that he would pay ₹ 20,000 during a 5-year period in the present value term, if he continues to buy water from the neighbour rather go for the well, which would have a life of 5 years. Mr. Patel has two decisions to make :

   (a) should he drill up to 250 feet ?

   (b) if no water is found at 250 feet, should he drill up to 300 feet ?

10. On April 1, 2019, Kasi has a portfolio consisting of four securities as shown below :

Security	A	K	S	P
Market Price (₹)	48.50	332.68	13.99	292.82
Number of Shares	673	480	721	358
β Value	0.74	1.28	0.54	0.46

Cost of capital is 16% p.a. compounded continuously. Kasi fears a fall in prices of shares in future. Accordingly, he approaches you for the advice to protect the interest of his portfolio.

You can make use of the following information :

(i) The current NIFTY value is 9380.

(ii) NIFTY Futures can be traded in units of 25 only.

(iii) Futures for September are currently quoted at 9540 and Futures for October are being quoted at 9820.

You are required to calculate :

(a) The Beta of his Portfolio.

(b) Theoretical Value of Futures for contracts expiring in September and October.

Given ($e^{0.067} = 1.0693$, $e^{0.08} = 1.0833$, $e^{0.093} = 1.0975$)

(c) The number of NIFTY contracts that he would have to sell, if he desires to hedge his entire portfolio until October.

11. A Rice Trader has planned to sell 22000 kgs of Rice after 3 months from now. The spot price of the Rice is ₹ 60 per kg and 3 months future on the same is trading at ₹ 59 per kg. Size of the contract is 1000 kgs. The price is expected to fall as low as ₹ 56 per kg, 3 months hence. What the trader can do to mitigate its risk of reduced profit ?

If he decides to make use of future market, what would be the effective realised price for its sale when after 3 months, spot price is ₹ 57 per kg and future contract price for 3 months is ₹ 58 per kg ?

SECTION - C

This is a **compulsory** question carrying **fifteen** marks.   1x15=15

12. **Case Study**

Airborne Ltd., wants to take advantage of a new government scheme of connecting smaller towns and wants to purchase one-turboprop airplane at a cost of ₹ 5 crores. It has obtained permission to fly on 4 sectors.

The company has provided the following estimates of its costs and revenues. The cost of capital is 16% and the company depreciates its assets over a period of 25 years on a straight-line basis. Currently it is operating in a 30% tax regime and under the new government scheme it enjoys a 100% tax waiver for the first 3 years.

- Passenger capacity of the aircraft :   60 passengers

- Expected operational capacity :   80%

- Per aircraft number of trips on a daily basis : 4

	Amount(₹)
Average realization per passenger	2,000
Annual cost of manpower	2,50,00,000
Airport handling charges - fixed per day	10,000
Annual repairs and maintenance	5,00,00,000
Daily operating costs	75,000

The costs with the exception of Airport handling charges are expected to increase 10% year on year and the operational capacity would go up by 90% from year 3.

The certainty of achieving the projected cash flows in the first five years are 0.8, 0.9, 0.75, 0.7 and 0.7 and Present Value are 0.862, 0.743, 0.641, 0.552 and 0.476 respectively.

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